

Appl. No.: 10/811,735
Amdt. dated 6/11/2007
Reply to Office action of 03/29/2007

REMARKS/ARGUMENTS

Claims 1-19 and 21-30 are pending, while Claims 14 and 23-28 have been withdrawn. In the Office Action, the Examiner rejects Claims 1, 2, 4-7, 9, 10, 16, 17, 19, 21, and 22 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,132,374 to Abell. Additionally, the Examiner rejects Claims 1-10, 16-19, and 21-22 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,669,137 to Chen in view of Abell. Furthermore, the Examiner rejects several of the dependent claims over a combination of Chen and Abell with various secondary references.

As explained more fully below, Applicant has amended independent Claims 1 and 16 to further distinguish the cited references. Therefore, in light of the amended claims and subsequent remarks, Applicant respectfully requests reconsideration and allowance of the claims.

Rejection under 35 U.S.C. § 102(b)

The Examiner rejects Claims 1, 2, 4-7, 9, 10, 16, 17, 19, 21, and 22 under 35 U.S.C. § 102(b) as being anticipated U.S. Patent No. 4,132,374 to Abell. Abell discloses a transonic airplane with a wing designed to sweep from the conventional orthogonal position used during subsonic flight to an oblique position used during transonic flight. Abell discloses the benefits of oblique wing designs in maintaining an optimal lift/drag ratio during transonic or supersonic flight. Furthermore, Abell discloses attaching the wing to the fuselage at a location offset from the vertical axis of the fuselage and rotating the wing about this pivot point. Lastly, Abell discloses the use of a ball and socket joint and a semi-circular track with a gear system to move the wing from the conventional orthogonal position to the desired oblique position.

Independent Claims 1 and 16 have been amended to recite that the wing member is pivotable by the wing actuator from a stationary position substantially aligned with the fuselage member during an initial stage of flight while the engine is not initiated. Thus, in an initial stage of flight, the wing is in a stationary position aligned with the fuselage, and after the missile obtains transonic speed, the oblique wing may be pivoted to a predetermined sweep angle.

In contrast, Abell discloses an oblique wing airplane requiring the wing member be positioned at the conventional orthogonal position during an initial stage flight and at subsonic

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speeds. In this regard, Figures 1 and 2 of Abell illustrates the natural position of the wing member (12) in its conventional orthogonal position for use during an initial stage of flight and at subsonic flight with a dot-dash outline. Furthermore, Abell discloses that the conventional position is required for takeoff, an initial stage of flight, and at subsonic flight, and storing the wing member in a position substantially aligned with the fuselage would not be desirable during these stages of flight. Therefore, Abell nowhere discloses a wing member to be positioned in a stationary position substantially aligned with the fuselage during an initial stage of flight while the engine is not initiated, as recited by independent Claims 1 and 16.

As a result, Applicant submits that the rejection of Claims 1 and 16 under 35 U.S.C. § 102(b) is overcome as Abell does not disclose an oblique wing member which is pivotable from a stationary position substantially aligned with the fuselage member during an initial stage of flight to a predetermined sweep angle of less than 90 degrees at transonic speed during flight. Because dependent Claims 2, 4-7, 9, 10, 17, 19, 21, and 22 each include recitations of independent Claims 1 and 16, respectively, Applicant submits that each of the dependent claims is distinguishable from the cited references for at least the same reasons applicable to the independent claims.

Rejection under 35 U.S.C. § 103(a)

The Examiner rejects Claims 1-10, 16-19, and 21-22 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,669,137 to Chen in view of Abell. Chen discloses an air vehicle with a rotor/wing means and a wing means designed so the air vehicle can fly in both helicopter mode and airplane mode. Chen discloses a rotor/wing means that functions like a helicopter rotor blade for takeoff, the initial stage of flight, and landings. Lastly, Chen discloses a wing means that can be yawed in opposite directions from the rotor/wing means while in airplane mode.

As noted above, independent Claims 1 and 16 have been amended to recite that the wing member is pivotable by the wing actuator from a stationary position substantially aligned with the fuselage member during an initial stage of flight while the engine is not initiated. Chen discloses an air vehicle designed to utilize one rotor/wing means during an initial stage of flight by rotating the wing means similar to a traditional helicopter rotor to generate lift. Moreover,

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Chen discloses a wing means which remains in a stationary position perpendicular to the fuselage during an initial stage of flight. In either case, Chen discloses that jet nozzles are employed for propulsion. Figures 1A and 2A illustrate the natural and stationary position of the wing means in the conventional orthogonal position for use during an initial stage of flight. Chen teaches or suggests this stationary perpendicular position for the wing means is required during an initial stage of flight because the wing means generates lift to alleviate the load from the rotating wing/rotor means until the wing means generates all the lift (col 6., lines 11-18). Although Chen generally discloses wing means that can be yawed during flight in airplane mode, Chen fails to teach or suggest a wing member that can be pivoted from a stationary position substantially aligned with the fuselage member during an initial stage of flight. Thus, Chen nowhere discloses positioning the wing in a manner substantially aligned with the fuselage member during an initial stage of flight while the engine is not initiated.

Therefore, Applicant respectfully submits that the rejection of Claims 1 and 16 under 35 U.S.C. §103(a) as being unpatentable over Chen in view of Abell is overcome. Furthermore, because the dependent claims include each of the recitations of a respective independent claim, Applicant submits that each of the dependent claims is distinguishable from both Chen and Abell for at least the same reasons discussed above with respect to independent Claims 1 and 16.

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CONCLUSION

In view of the amended claims and remarks presented above, it is respectfully submitted that all of the present claims of the present application are in condition for immediate allowance. It is therefore respectfully requested that a Notice of Allowance be issued. The Examiner is encouraged to contact Applicant's undersigned attorney to resolve any remaining issues in order to expedite examination of the present application.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,



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